12 GUNSHOT RESIDUE EXAMINATIONS AND DISTANCE DETERMINATIONS

12.1 Assignments

12.1.1 Successfully complete the Gunpowder and Primer Residues Course at the FBI Academy, Quantico, Virginia, or equivalent course. Coordinate this with the Training Officer.

(***Use Training Assignment #41 to complete this objective.***)

_____ _____
Instructor Date

_____ _____
Training Officer Date

12.1.2 Demonstrate proficiency in preparing the chemicals and the test papers used in the modified Griess test and the Sodium Rhodizonate test, including the test media and the photographic paper.

(***Use Training Assignment #60 to complete this objective.***)

_____ _____
Training Officer Date

12.1.3 Describe in detail the chemical reactions that take place in the burning of smokeless powder, the modified Griess test and the Sodium Rhodizonate test.

(***Use Training Assignment #60 to complete this objective.***)

_____ _____
Training Officer Date

12.1.4 Demonstrate your proficiency in conducting the following techniques, using the techniques set out in the Firearm Section protocol manual:

a. conventional Modified Griess test
b. reverse Griess test
c. sodium rhodizonate test
d. Bashinsky transfer
e. blotting transfer

_____ _____
Training Officer Date

12.1.5 Using specimens provided by the Training Officer, demonstrate proficiency in conducting "*muzzle-to-garment*" distance tests in cases involving the deposition of gunshot residues. The examination should include note taking, microscopic and chemical examinations, test firing to produce test patterns and accurately determining "*muzzle-to-garment*" distance.

_____ _____
Training Officer Date

12.1.6 Using specimens provided by the Training Officer, demonstrate proficiency in conducting "*muzzle-to-garment*" distance tests in cases involving shot patterns. The examination should include note taking; microscopic; and chemical examinations; test firing of shot patterns; gunshot residue patterns; and accurately determining *"muzzle-to-garment*" distance; orientation of the firearm; sources and patterns of gunshot residues (e.g., muzzle orthogonal vs. muzzle oblique; GSR patterns from flash suppressors; sound suppressors; and revolver cylinder gap); and geometric aspects of powder and GSR patterns.

_____ _____
Training Officer Date

12.1.7 Read the article entitled "*Graphical Analysis of the Shotgun/Shotshell Performance Envelope in the Distance Determination Cases*" in the AFTE Journal, October 1989, issue. Discuss this article with the Training Officer.

_____ _____
Training Officer Date

12.1.8 Attend an autopsy of a shooting victim at the Medical Examiner's facilities. Document any indications of gunshot residue deposits photographically. Also, document the physical effects of the projectile on the body. Prepare a report on your observations and include any information obtained by medical examiner personnel concerning their opinions on distance determination and bullet effects, cause of death, direction of bullet travel and other information pertinent to firearm identification.

_____ _____
Medical Examiner Date

_____ _____
Training Officer Date

12.1.9 Visit the facilities of the Armed Forces Institute of Pathology *(AFIP if feasible or any other such facility in your area).* Become familiar with their mission, capabilities, casework and research efforts. Generate a report on this visit emphasizing understanding of their capabilities concerning gunshot wound analysis.

_____ _____
Agency Representative Date

_____ _____
Training Officer Date

12.2 Reference Materials Terminal Ballistics: Gunshot Residues, Shot Terminal Ballistics: Gunshot Residues, Shot Patterns, Distance Determinations, Bullet Path Analyses & Wound Effects Analyses & Wound Effects

The following reference materials serve several purposes:

- To provide a wider range of additional resources in a given topic
- To provide reference materials for future use
- To gain additional in depth knowledge in a particular subject area

Other references encountered in this category should be made as additional notes at the end of this listing.

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◆ End